

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 329926

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705		2. OGRID Number 873
		3. API Number 30-015-50201
4. Property Code 333585	5. Property Name PALMILLO 29 30 STATE COM	6. Well No. 271H

7. Surface Location

UL - Lot A	Section 25	Township 19S	Range 27E	Lot Idn	Feet From 700	N/S Line N	Feet From 445	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot A	Section 28	Township 19S	Range 28E	Lot Idn A	Feet From 660	N/S Line N	Feet From 50	E/W Line E	County Eddy
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9. Pool Information

WINCHESTER; BONE SPRING, WEST	97569
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3474
16. Multiple N	17. Proposed Depth 17500	18. Formation 2nd Bone Spring Sand	19. Contractor	20. Spud Date 12/12/2022
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	375	265	0
Int1	12.25	9.625	40	3350	625	0
Prod	8.5	5.5	20	17500	2380	2500

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	
Double Ram	3000	3000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Sorina Flores	Approved By: Katherine Pickford	
Title: Supv of Drilling Services	Title: Geoscientist	
Email Address: sorina.flores@apachecorp.com	Approved Date: 12/7/2022	Expiration Date: 12/7/2024
Date: 12/5/2022	Phone: 432-818-1167	Conditions of Approval Attached

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025- 15-50201		² Pool Code 97569		³ Pool Name WINCHESTER; BONE SPRING, WEST	
⁴ Property Code 333585		⁵ Property Name PALMILLO 29-30 STATE COM			⁶ Well Number 271H
⁷ OGRID NO. 873		⁸ Operator Name APACHE CORPORATION			⁹ Elevation 3474'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
A	25	19S	27E		700	NORTH	445	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	29	19S	28E		660	NORTH	50	EAST	EDDY

¹² Dedicated Acres 323.08	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

¹⁶ <u>CORNER DATA</u> NAD 83 GRID - NM EAST <u>GEODETIC DATA</u> NAD 83 GRID - NM EAST <u>SURFACE LOCATION (SL)</u> N: 595298.0 - E: 574601.8 LAT: 32.6364767° N LONG: 104.2252718° W <u>FIRST TAKE POINT (FTP)</u> 660' FNL & 100' FWL - SEC 30 N: 595331.2 - E: 575147.0 LAT: 32.6365664° N LONG: 104.2235007° W <u>LAST TAKE POINT (LTP)</u> 660' FNL & 100' FEL - SEC 29 N: 595509.3 - E: 585474.9 LAT: 32.6370221° N LONG: 104.1899491° W <u>BOTTOM HOLE (BH)</u> N: 595509.8 - E: 585524.8 LAT: 32.6370232° N LONG: 104.1897868° W A: FOUND BRASS CAP "1941" N: 590834.2 - E: 569728.4 B: FOUND BRASS CAP "1941" N: 593464.9 - E: 569747.2 C: FOUND BRASS CAP "1941" N: 596098.3 - E: 569768.4 D: FOUND BRASS CAP "1941" N: 596043.6 - E: 572411.3 E: FOUND BRASS CAP "1941" N: 595988.5 - E: 575053.3 F: FOUND BRASS CAP "1941" N: 596055.5 - E: 577761.8 G: FOUND BRASS CAP "1941" N: 596120.3 - E: 580368.7 H: FOUND BRASS CAP "1941" N: 596144.1 - E: 582974.0 I: FOUND BRASS CAP "1941" N: 596170.1 - E: 585579.7 J: FOUND BRASS CAP "1941" N: 593538.2 - E: 585560.2 K: FOUND BRASS CAP "1941" N: 590906.8 - E: 585541.3 L: FOUND BRASS CAP "1941" N: 590849.0 - E: 582921.0 M: FOUND BRASS CAP "1941" N: 590871.3 - E: 580314.9 N: FOUND BRASS CAP "1941" N: 590726.0 - E: 577724.3 O: FOUND BRASS CAP "1941" N: 590726.4 - E: 575003.7 P: FOUND BRASS CAP "1941" N: 590780.1 - E: 572365.3 Q: FOUND BRASS CAP "1941" N: 593357.1 - E: 575028.3 R: FOUND BRASS CAP "1941" N: 593498.9 - E: 580342.6		¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Sorina L Flores 12/6/2022 Signature Date Sorina L Flores Printed Name sorina.flores@apachecorp.com E-mail Address
<u>18</u> SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 04/28/2021 Date of Survey Signature and Seal of Professional Surveyor: DALE E. BELL NEW MEXICO PROFESSIONAL SURVEYOR 14400 12/06/2022 Certificate Number REV: SL MOVE 09/26/2022		

Job No.: LS21040393R

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State of New Mexico
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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 329926

PERMIT COMMENTS

Operator Name and Address: APACHE CORPORATION [873] 303 Veterans Airpark Ln Midland, TX 79705		API Number: 30-015-50201
		Well: PALMILLO 29 30 STATE COM #271H
Created By	Comment	Comment Date
sflores	Apache will utilize a spudder rig to pre-set surface csg. Procedure attached.	12/5/2022

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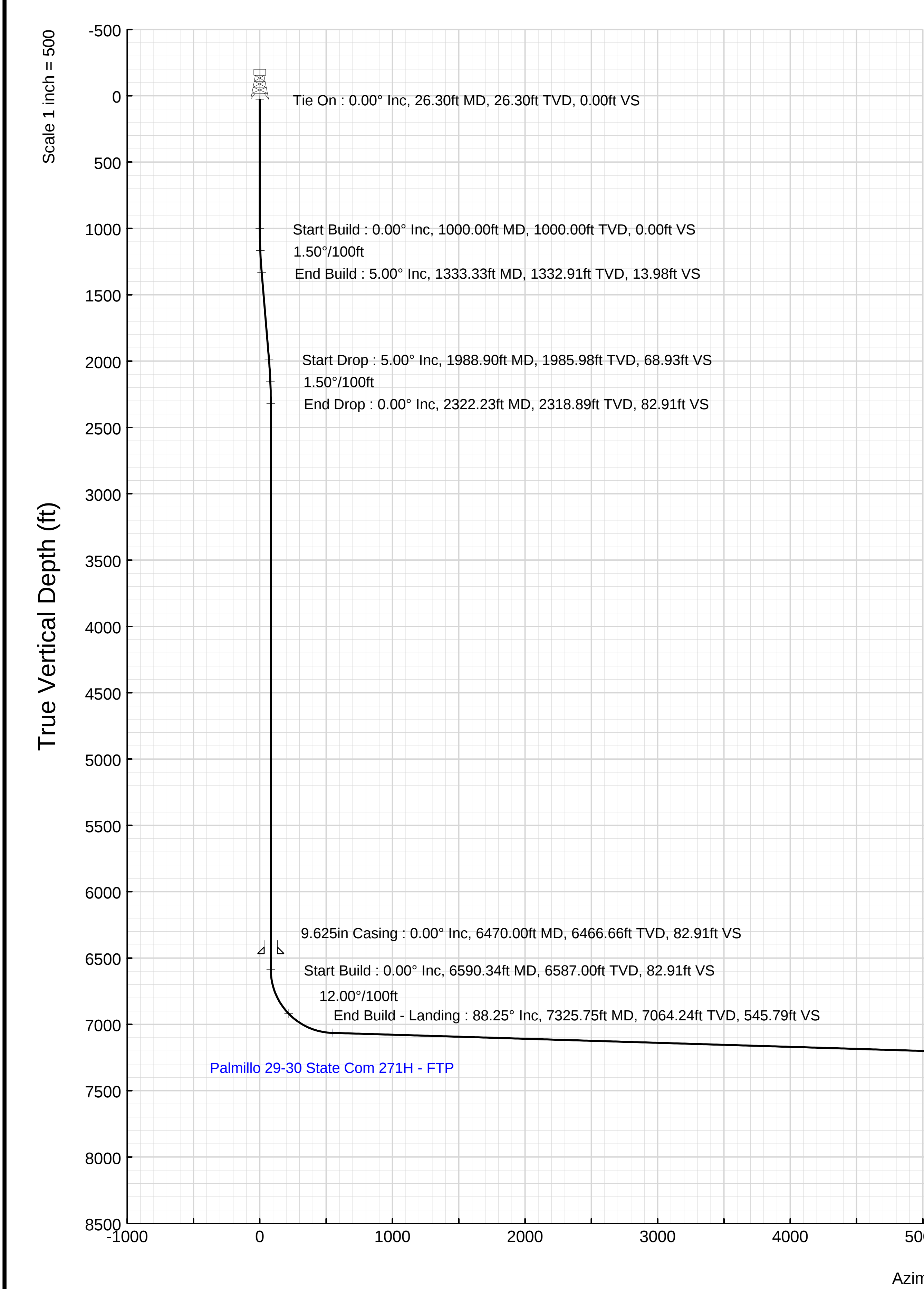
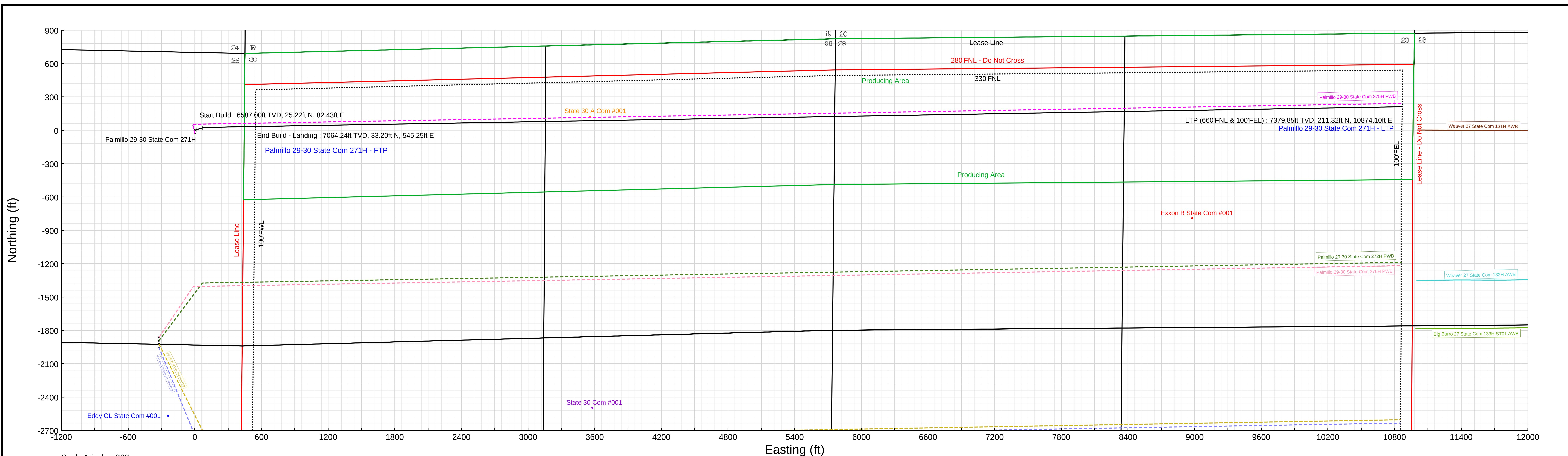
Form APD Conditions

Permit 329926

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: APACHE CORPORATION [873] 303 Veterans Airpark Ln Midland, TX 79705	API Number: 30-015-50201
	Well: PALMILLO 29 30 STATE COM #271H

OCD Reviewer	Condition
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	The Operator is to notify NMOC by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system



Apache Corporation

Location: Eddy County, NM
Field: Eddy County, NM (NAD-83)
Facility: Palmillo 29-30 State Com Pad

Well: Palmillo 29-30 State Com 271H
Wellbore: Palmillo 29-30 State Com 271H PWB

Plot reference wellpath is Palmillo 29-30 State Com 271H Rev-A.0
True vertical depths are referenced to H&P 656 (KB)
Reference wellpath measured depths are referenced to H&P 656 (KB)
H&P 656 (KB) to Mean Sea Level: 2500.2 feet
Mean Sea Level to Ground level (At Slot: Palmillo 29-30 State Com 271H): -3474 feet
Offset wellpath MDs are referenced to each path's default MD datum

Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3003), US feet
North Reference: Grid north
Scale: True distance
Coordinates are in feet referenced to Slot
Depths are in feet
Created by: moyagusa on 2022-11-30; Database: WA, HOU, Midland, Delin

Location Information							
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude			
Palmillo 29-30 State Com Pad	574601.800	595298.000	32°38'11.0191"N	104°13'30.9815"W			
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Palmillo 29-30 State Com 271H	30.00	0.20	574601.800	595298.000	32°38'11.3159"N	104°13'30.9788"W	
H&P 656 (KB) to Ground level (At Slot: Palmillo 29-30 State Com 271H)					26.3ft		
Mean Sea Level to Ground level (At Slot: Palmillo 29-30 State Com 271H)					-3474ft		
H&P 656 (KB) to Mean Sea Level					3500.2ft		

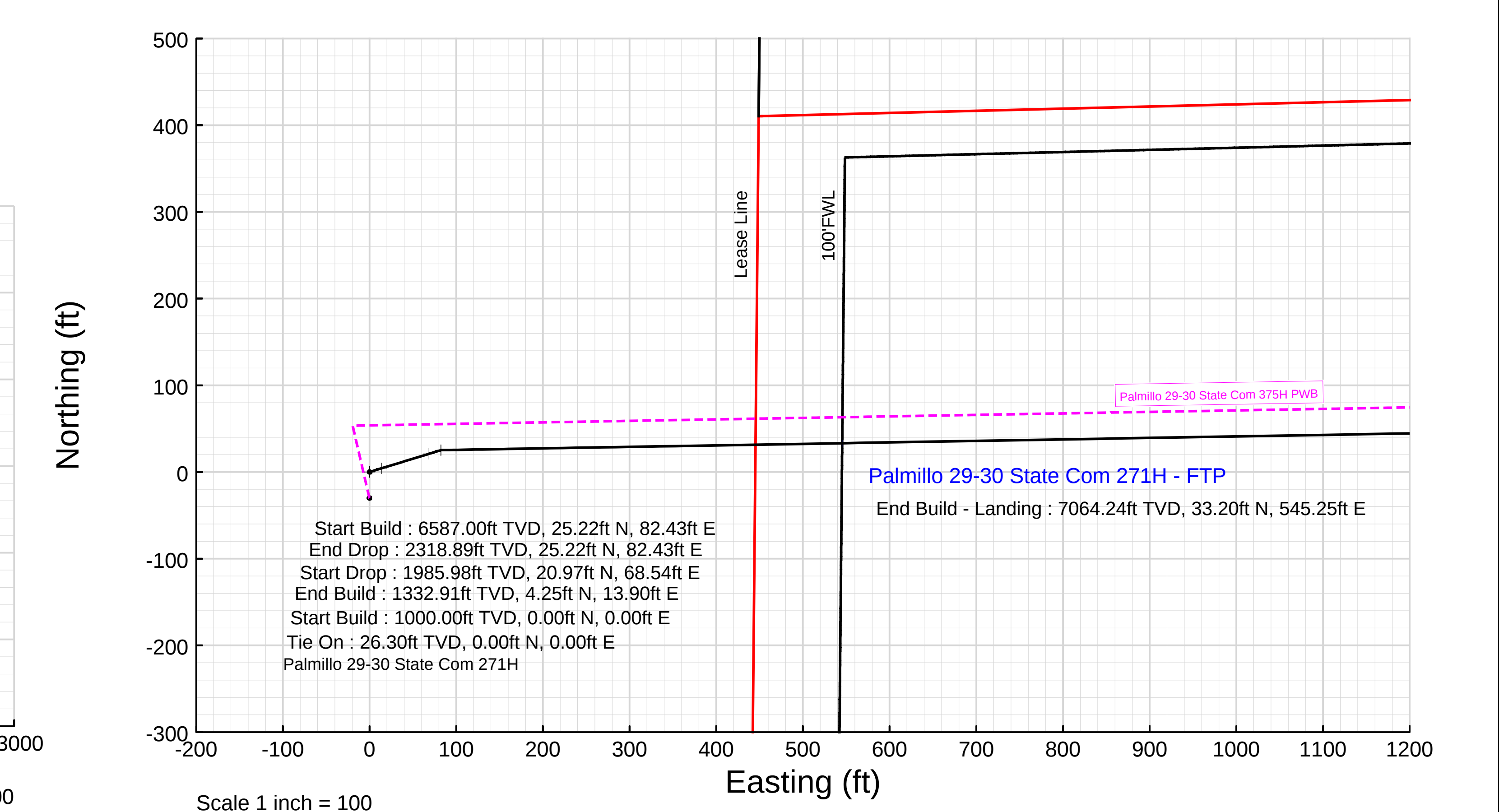
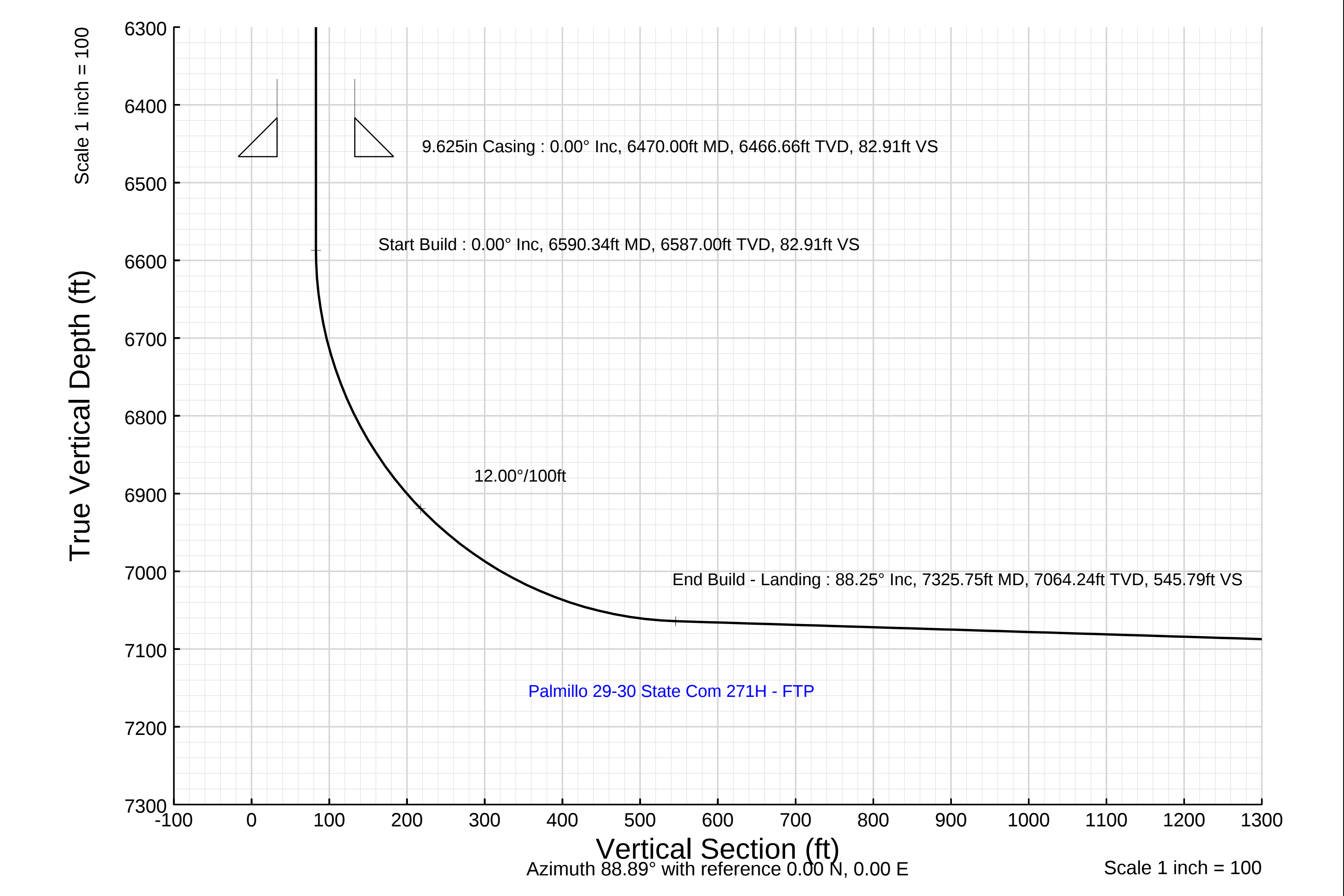
Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	26.30	0.000	72.988	26.30	0.00	0.00	0.00	0.00
Start Build	1000.00	0.000	72.988	1000.00	0.00	0.00	0.00	0.00
End Build	1333.33	5.000	72.988	1332.91	4.25	13.90	1.50	13.98
Start Drop	1988.90	5.000	72.988	1985.98	20.97	68.54	0.00	68.93
End Drop	2322.23	0.000	89.012	2318.89	25.22	82.43	1.50	82.91
Start Build	6590.34	0.000	89.012	6587.00	25.22	82.43	0.00	82.91
End Build - Landing	7325.75	88.250	89.012	7064.24	33.20	545.25	12.00	545.79
LTP (660'FNL & 100'FEL)	17660.96	88.250	89.012	7379.85	211.32	10874.10	0.00	10876.15

Bottom Hole Location									
MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
17660.96	88.250	89.012	7379.85	211.32	10874.10	589474.90	595509.30	32°38'13.2795"N	104°13'29.8165"W

HDGM2022v1.0 (1900.0 to 2023.0) Dip: 60.26° Field: 47605.7 nT
Magnetic North is 6.87 degrees East of True North (at 11/30/2022)
Grid North is 0.56 degrees East of True North
To correct azimuth from True to Grid subtract 0.06 degrees
To correct azimuth from Magnetic to Grid add 6.81 degrees

LTP (660'FNL & 100'FEL) : 88.25° Inc, 17660.96ft MD, 7379.85ft TVD, 10876.15ft VS

Palmillo 29-30 State Com 271H - LTP





Planned Wellpath Report

Palmillo 29-30 State Com 271H Rev-A.0
Page 1 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Moyagusa
Scale	0.999910	Report Generated	12/1/2022 at 9:24:57 AM
Convergence at slot	0.06° East	Database	WA_HOU_Midland_Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	30.00	0.20	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W
Facility Reference Pt			574601.60	595268.00	32°38'11.0191"N	104°13'30.9815"W
Field Reference Pt			165000.00	0.00	30°59'39.8929"N	105°32'3.8657"W

WELLPATH DATUM

Calculation method	Minimum curvature	H&P 656 (KB) to Facility Vertical Datum	3500.30ft
Horizontal Reference Pt	Slot	H&P 656 (KB) to Mean Sea Level	3500.30ft
Vertical Reference Pt	H&P 656 (KB)	H&P 656 (KB) to Ground Level at Slot (Palmillo 29-30 State Com 271H)	26.30ft
MD Reference Pt	H&P 656 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	88.89°



Planned Wellpath Report

Palmillo 29-30 State Com 271H Rev-A.0

Page 2 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00†	0.000	72.988	0.00	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
26.30	0.000	72.988	26.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	Tie On
126.30†	0.000	72.988	126.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
226.30†	0.000	72.988	226.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
326.30†	0.000	72.988	326.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
426.30†	0.000	72.988	426.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
526.30†	0.000	72.988	526.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
626.30†	0.000	72.988	626.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
726.30†	0.000	72.988	726.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
826.30†	0.000	72.988	826.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
926.30†	0.000	72.988	926.30	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	
1000.00	0.000	72.988	1000.00	0.00	0.00	0.00	574601.80	595298.00	32°38'11.3159"N	104°13'30.9788"W	0.00	0.00	0.00	Start Build
1026.30†	0.394	72.988	1026.30	0.09	0.03	0.09	574601.89	595298.03	32°38'11.3162"N	104°13'30.9778"W	1.50	1.50	0.00	
1126.30†	1.894	72.988	1126.28	2.01	0.61	2.00	574603.80	595298.61	32°38'11.3220"N	104°13'30.9555"W	1.50	1.50	0.00	
1226.30†	3.394	72.988	1226.17	6.45	1.96	6.41	574608.21	595299.96	32°38'11.3353"N	104°13'30.9039"W	1.50	1.50	0.00	
1326.30†	4.894	72.988	1325.90	13.40	4.08	13.32	574615.12	595302.07	32°38'11.3561"N	104°13'30.8230"W	1.50	1.50	0.00	
1333.33	5.000	72.988	1332.91	13.98	4.25	13.90	574615.70	595302.25	32°38'11.3579"N	104°13'30.8162"W	1.50	1.50	0.00	End Build
1426.30†	5.000	72.988	1425.52	21.77	6.62	21.65	574623.45	595304.62	32°38'11.3813"N	104°13'30.7256"W	0.00	0.00	0.00	
1526.30†	5.000	72.988	1525.14	30.15	9.17	29.98	574631.78	595307.17	32°38'11.4064"N	104°13'30.6281"W	0.00	0.00	0.00	
1626.30†	5.000	72.988	1624.76	38.54	11.72	38.32	574640.11	595309.72	32°38'11.4315"N	104°13'30.5306"W	0.00	0.00	0.00	
1726.30†	5.000	72.988	1724.38	46.92	14.27	46.65	574648.45	595312.27	32°38'11.4567"N	104°13'30.4331"W	0.00	0.00	0.00	
1826.30†	5.000	72.988	1824.00	55.30	16.82	54.98	574656.78	595314.82	32°38'11.4818"N	104°13'30.3357"W	0.00	0.00	0.00	
1926.30†	5.000	72.988	1923.62	63.68	19.37	63.32	574665.11	595317.37	32°38'11.5070"N	104°13'30.2382"W	0.00	0.00	0.00	
1988.90	5.000	72.988	1985.98	68.93	20.97	68.54	574670.33	595318.97	32°38'11.5227"N	104°13'30.1771"W	0.00	0.00	0.00	Start Drop
2026.30†	4.439	72.988	2023.26	71.89	21.87	71.48	574673.27	595319.87	32°38'11.5316"N	104°13'30.1427"W	1.50	-1.50	0.00	
2126.30†	2.939	72.988	2123.05	78.08	23.75	77.63	574679.42	595321.75	32°38'11.5502"N	104°13'30.0707"W	1.50	-1.50	0.00	
2226.30†	1.439	72.988	2222.97	81.75	24.87	81.28	574683.07	595322.87	32°38'11.5612"N	104°13'30.0280"W	1.50	-1.50	0.00	
2322.23	0.000	89.012	2318.89	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	1.50	-1.50	0.00	End Drop
2326.30†	0.000	89.012	2322.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
2426.30†	0.000	89.012	2422.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	



Planned Wellpath Report

Palmillo 29-30 State Com 271H Rev-A.0

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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
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Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
2526.30†	0.000	89.012	2522.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
2626.30†	0.000	89.012	2622.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
2726.30†	0.000	89.012	2722.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
2826.30†	0.000	89.012	2822.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
2926.30†	0.000	89.012	2922.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3026.30†	0.000	89.012	3022.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3126.30†	0.000	89.012	3122.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3226.30†	0.000	89.012	3222.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3326.30†	0.000	89.012	3322.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3426.30†	0.000	89.012	3422.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3526.30†	0.000	89.012	3522.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3626.30†	0.000	89.012	3622.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3726.30†	0.000	89.012	3722.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3826.30†	0.000	89.012	3822.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
3926.30†	0.000	89.012	3922.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4026.30†	0.000	89.012	4022.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4126.30†	0.000	89.012	4122.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4226.30†	0.000	89.012	4222.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4326.30†	0.000	89.012	4322.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4426.30†	0.000	89.012	4422.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4526.30†	0.000	89.012	4522.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4626.30†	0.000	89.012	4622.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4726.30†	0.000	89.012	4722.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4826.30†	0.000	89.012	4822.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
4926.30†	0.000	89.012	4922.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5026.30†	0.000	89.012	5022.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5126.30†	0.000	89.012	5122.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5226.30†	0.000	89.012	5222.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5326.30†	0.000	89.012	5322.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5426.30†	0.000	89.012	5422.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
5526.30†	0.000	89.012	5522.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5626.30†	0.000	89.012	5622.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5726.30†	0.000	89.012	5722.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5826.30†	0.000	89.012	5822.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
5926.30†	0.000	89.012	5922.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6026.30†	0.000	89.012	6022.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6126.30†	0.000	89.012	6122.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6226.30†	0.000	89.012	6222.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6326.30†	0.000	89.012	6322.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6426.30†	0.000	89.012	6422.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6526.30†	0.000	89.012	6522.96	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	
6590.34	0.000	89.012	6587.00	82.91	25.22	82.43	574684.23	595323.22	32°38'11.5647"N	104°13'30.0146"W	0.00	0.00	0.00	Start Build
6626.30†	4.316	89.012	6622.93	84.26	25.25	83.79	574685.58	595323.24	32°38'11.5649"N	104°13'29.9987"W	12.00	12.00	0.00	
6726.30†	16.316	89.012	6721.13	102.14	25.55	101.66	574703.45	595323.55	32°38'11.5677"N	104°13'29.7897"W	12.00	12.00	0.00	
6826.30†	28.316	89.012	6813.47	140.04	26.21	139.55	574741.34	595324.20	32°38'11.5738"N	104°13'29.3466"W	12.00	12.00	0.00	
6926.30†	40.316	89.012	6895.91	196.31	27.18	195.82	574797.60	595325.17	32°38'11.5829"N	104°13'28.6886"W	12.00	12.00	0.00	
7026.30†	52.316	89.012	6964.86	268.49	28.42	267.99	574869.77	595326.42	32°38'11.5944"N	104°13'27.8447"W	12.00	12.00	0.00	
7126.30†	64.316	89.012	7017.29	353.43	29.89	352.92	574954.69	595327.88	32°38'11.6081"N	104°13'26.8515"W	12.00	12.00	0.00	
7226.30†	76.316	89.012	7050.91	447.42	31.51	446.89	575048.65	595329.50	32°38'11.6232"N	104°13'25.7526"W	12.00	12.00	0.00	
7325.75	88.250	89.012	7064.24 [†]	545.79	33.20	545.25	575147.00	595331.20	32°38'11.6389"N	104°13'24.6024"W	12.00	12.00	0.00	End Build - Landing
7326.30†	88.250	89.012	7064.26	546.34	33.21	545.79	575147.54	595331.21	32°38'11.6390"N	104°13'24.5960"W	0.00	0.00	0.00	
7426.30†	88.250	89.012	7067.31	646.29	34.94	645.73	575247.47	595332.93	32°38'11.6550"N	104°13'23.4273"W	0.00	0.00	0.00	
7526.30†	88.250	89.012	7070.36	746.24	36.66	745.67	575347.40	595334.66	32°38'11.6711"N	104°13'22.2587"W	0.00	0.00	0.00	
7626.30†	88.250	89.012	7073.42	846.20	38.38	845.61	575447.33	595336.38	32°38'11.6871"N	104°13'21.0900"W	0.00	0.00	0.00	
7726.30†	88.250	89.012	7076.47	946.15	40.11	945.55	575547.26	595338.10	32°38'11.7031"N	104°13'19.9213"W	0.00	0.00	0.00	
7826.30†	88.250	89.012	7079.52	1046.10	41.83	1045.49	575647.19	595339.83	32°38'11.7191"N	104°13'18.7526"W	0.00	0.00	0.00	
7926.30†	88.250	89.012	7082.58	1146.06	43.55	1145.43	575747.12	595341.55	32°38'11.7351"N	104°13'17.5839"W	0.00	0.00	0.00	
8026.30†	88.250	89.012	7085.63	1246.01	45.28	1245.36	575847.05	595343.27	32°38'11.7512"N	104°13'16.4153"W	0.00	0.00	0.00	
8126.30†	88.250	89.012	7088.69	1345.96	47.00	1345.30	575946.98	595345.00	32°38'11.7672"N	104°13'15.2466"W	0.00	0.00	0.00	
8226.30†	88.250	89.012	7091.74	1445.92	48.72	1445.24	576046.91	595346.72	32°38'11.7832"N	104°13'14.0779"W	0.00	0.00	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
8326.30†	88.250	89.012	7094.79	1545.87	50.45	1545.18	576146.84	595348.44	32°38'11.7992"N	104°13'12.9092"W	0.00	0.00	0.00	
8426.30†	88.250	89.012	7097.85	1645.82	52.17	1645.12	576246.77	595350.17	32°38'11.8152"N	104°13'11.7405"W	0.00	0.00	0.00	
8526.30†	88.250	89.012	7100.90	1745.77	53.89	1745.06	576346.70	595351.89	32°38'11.8312"N	104°13'10.5719"W	0.00	0.00	0.00	
8626.30†	88.250	89.012	7103.95	1845.73	55.62	1845.00	576446.63	595353.61	32°38'11.8471"N	104°13'9.4032"W	0.00	0.00	0.00	
8726.30†	88.250	89.012	7107.01	1945.68	57.34	1944.93	576546.56	595355.33	32°38'11.8631"N	104°13'8.2345"W	0.00	0.00	0.00	
8826.30†	88.250	89.012	7110.06	2045.63	59.06	2044.87	576646.49	595357.06	32°38'11.8791"N	104°13'7.0658"W	0.00	0.00	0.00	
8926.30†	88.250	89.012	7113.11	2145.59	60.79	2144.81	576746.41	595358.78	32°38'11.8951"N	104°13'5.8971"W	0.00	0.00	0.00	
9026.30†	88.250	89.012	7116.17	2245.54	62.51	2244.75	576846.34	595360.50	32°38'11.9111"N	104°13'4.7285"W	0.00	0.00	0.00	
9126.30†	88.250	89.012	7119.22	2345.49	64.23	2344.69	576946.27	595362.23	32°38'11.9271"N	104°13'3.5598"W	0.00	0.00	0.00	
9226.30†	88.250	89.012	7122.28	2445.45	65.96	2444.63	577046.20	595363.95	32°38'11.9430"N	104°13'2.3911"W	0.00	0.00	0.00	
9326.30†	88.250	89.012	7125.33	2545.40	67.68	2544.57	577146.13	595365.67	32°38'11.9590"N	104°13'1.2224"W	0.00	0.00	0.00	
9426.30†	88.250	89.012	7128.38	2645.35	69.40	2644.50	577246.06	595367.40	32°38'11.9750"N	104°13'0.0537"W	0.00	0.00	0.00	
9526.30†	88.250	89.012	7131.44	2745.31	71.13	2744.44	577345.99	595369.12	32°38'11.9909"N	104°12'58.8850"W	0.00	0.00	0.00	
9626.30†	88.250	89.012	7134.49	2845.26	72.85	2844.38	577445.92	595370.84	32°38'12.0069"N	104°12'57.7164"W	0.00	0.00	0.00	
9726.30†	88.250	89.012	7137.54	2945.21	74.57	2944.32	577545.85	595372.57	32°38'12.0229"N	104°12'56.5477"W	0.00	0.00	0.00	
9826.30†	88.250	89.012	7140.60	3045.17	76.30	3044.26	577645.78	595374.29	32°38'12.0388"N	104°12'55.3790"W	0.00	0.00	0.00	
9926.30†	88.250	89.012	7143.65	3145.12	78.02	3144.20	577745.71	595376.01	32°38'12.0548"N	104°12'54.2103"W	0.00	0.00	0.00	
10026.30†	88.250	89.012	7146.71	3245.07	79.74	3244.13	577845.64	595377.74	32°38'12.0707"N	104°12'53.0416"W	0.00	0.00	0.00	
10126.30†	88.250	89.012	7149.76	3345.02	81.47	3344.07	577945.57	595379.46	32°38'12.0867"N	104°12'51.8730"W	0.00	0.00	0.00	
10226.30†	88.250	89.012	7152.81	3444.98	83.19	3444.01	578045.50	595381.18	32°38'12.1026"N	104°12'50.7043"W	0.00	0.00	0.00	
10326.30†	88.250	89.012	7155.87	3544.93	84.91	3543.95	578145.43	595382.91	32°38'12.1186"N	104°12'49.5356"W	0.00	0.00	0.00	
10426.30†	88.250	89.012	7158.92	3644.88	86.64	3643.89	578245.35	595384.63	32°38'12.1345"N	104°12'48.3669"W	0.00	0.00	0.00	
10526.30†	88.250	89.012	7161.97	3744.84	88.36	3743.83	578345.28	595386.35	32°38'12.1504"N	104°12'47.1982"W	0.00	0.00	0.00	
10626.30†	88.250	89.012	7165.03	3844.79	90.08	3843.77	578445.21	595388.08	32°38'12.1664"N	104°12'46.0295"W	0.00	0.00	0.00	
10726.30†	88.250	89.012	7168.08	3944.74	91.81	3943.70	578545.14	595389.80	32°38'12.1823"N	104°12'44.8609"W	0.00	0.00	0.00	
10826.30†	88.250	89.012	7171.14	4044.70	93.53	4043.64	578645.07	595391.52	32°38'12.1982"N	104°12'43.6922"W	0.00	0.00	0.00	
10926.30†	88.250	89.012	7174.19	4144.65	95.25	4143.58	578745.00	595393.25	32°38'12.2141"N	104°12'42.5235"W	0.00	0.00	0.00	
11026.30†	88.250	89.012	7177.24	4244.60	96.98	4243.52	578844.93	595394.97	32°38'12.2301"N	104°12'41.3548"W	0.00	0.00	0.00	
11126.30†	88.250	89.012	7180.30	4344.56	98.70	4343.46	578944.86	595396.69	32°38'12.2460"N	104°12'40.1861"W	0.00	0.00	0.00	
11226.30†	88.250	89.012	7183.35	4444.51	100.42	4443.40	579044.79	595398.42	32°38'12.2619"N	104°12'39.0174"W	0.00	0.00	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
11326.30†	88.250	89.012	7186.40	4544.46	102.15	4543.34	579144.72	595400.14	32°38'12.2778"N	104°12'37.8488"W	0.00	0.00	0.00	
11426.30†	88.250	89.012	7189.46	4644.42	103.87	4643.27	579244.65	595401.86	32°38'12.2937"N	104°12'36.6801"W	0.00	0.00	0.00	
11526.30†	88.250	89.012	7192.51	4744.37	105.60	4743.21	579344.58	595403.59	32°38'12.3096"N	104°12'35.5114"W	0.00	0.00	0.00	
11626.30†	88.250	89.012	7195.56	4844.32	107.32	4843.15	579444.51	595405.31	32°38'12.3255"N	104°12'34.3427"W	0.00	0.00	0.00	
11726.30†	88.250	89.012	7198.62	4944.27	109.04	4943.09	579544.44	595407.03	32°38'12.3414"N	104°12'33.1740"W	0.00	0.00	0.00	
11826.30†	88.250	89.012	7201.67	5044.23	110.77	5043.03	579644.37	595408.76	32°38'12.3573"N	104°12'32.0053"W	0.00	0.00	0.00	
11926.30†	88.250	89.012	7204.73	5144.18	112.49	5142.97	579744.29	595410.48	32°38'12.3732"N	104°12'30.8367"W	0.00	0.00	0.00	
12026.30†	88.250	89.012	7207.78	5244.13	114.21	5242.90	579844.22	595412.20	32°38'12.3891"N	104°12'29.6680"W	0.00	0.00	0.00	
12126.30†	88.250	89.012	7210.83	5344.09	115.94	5342.84	579944.15	595413.92	32°38'12.4050"N	104°12'28.4993"W	0.00	0.00	0.00	
12226.30†	88.250	89.012	7213.89	5444.04	117.66	5442.78	580044.08	595415.65	32°38'12.4209"N	104°12'27.3306"W	0.00	0.00	0.00	
12326.30†	88.250	89.012	7216.94	5543.99	119.38	5542.72	580144.01	595417.37	32°38'12.4367"N	104°12'26.1619"W	0.00	0.00	0.00	
12426.30†	88.250	89.012	7219.99	5643.95	121.11	5642.66	580243.94	595419.09	32°38'12.4526"N	104°12'24.9932"W	0.00	0.00	0.00	
12526.30†	88.250	89.012	7223.05	5743.90	122.83	5742.60	580343.87	595420.82	32°38'12.4685"N	104°12'23.8245"W	0.00	0.00	0.00	
12626.30†	88.250	89.012	7226.10	5843.85	124.55	5842.54	580443.80	595422.54	32°38'12.4844"N	104°12'22.6559"W	0.00	0.00	0.00	
12726.30†	88.250	89.012	7229.16	5943.81	126.28	5942.47	580543.73	595424.26	32°38'12.5002"N	104°12'21.4872"W	0.00	0.00	0.00	
12826.30†	88.250	89.012	7232.21	6043.76	128.00	6042.41	580643.66	595425.99	32°38'12.5161"N	104°12'20.3185"W	0.00	0.00	0.00	
12926.30†	88.250	89.012	7235.26	6143.71	129.72	6142.35	580743.59	595427.71	32°38'12.5319"N	104°12'19.1498"W	0.00	0.00	0.00	
13026.30†	88.250	89.012	7238.32	6243.67	131.45	6242.29	580843.52	595429.43	32°38'12.5478"N	104°12'17.9811"W	0.00	0.00	0.00	
13126.30†	88.250	89.012	7241.37	6343.62	133.17	6342.23	580943.45	595431.16	32°38'12.5637"N	104°12'16.8124"W	0.00	0.00	0.00	
13226.30†	88.250	89.012	7244.42	6443.57	134.89	6442.17	581043.38	595432.88	32°38'12.5795"N	104°12'15.6438"W	0.00	0.00	0.00	
13326.30†	88.250	89.012	7247.48	6543.52	136.62	6542.11	581143.31	595434.60	32°38'12.5954"N	104°12'14.4751"W	0.00	0.00	0.00	
13426.30†	88.250	89.012	7250.53	6643.48	138.34	6642.04	581243.24	595436.33	32°38'12.6112"N	104°12'13.3064"W	0.00	0.00	0.00	
13526.30†	88.250	89.012	7253.59	6743.43	140.06	6741.98	581343.16	595438.05	32°38'12.6271"N	104°12'12.1377"W	0.00	0.00	0.00	
13626.30†	88.250	89.012	7256.64	6843.38	141.79	6841.92	581443.09	595439.77	32°38'12.6429"N	104°12'10.9690"W	0.00	0.00	0.00	
13726.30†	88.250	89.012	7259.69	6943.34	143.51	6941.86	581543.02	595441.50	32°38'12.6587"N	104°12'9.8003"W	0.00	0.00	0.00	
13826.30†	88.250	89.012	7262.75	7043.29	145.23	7041.80	581642.95	595443.22	32°38'12.6746"N	104°12'8.6316"W	0.00	0.00	0.00	
13926.30†	88.250	89.012	7265.80	7143.24	146.96	7141.74	581742.88	595444.94	32°38'12.6904"N	104°12'7.4630"W	0.00	0.00	0.00	
14026.30†	88.250	89.012	7268.85	7243.20	148.68	7241.67	581842.81	595446.67	32°38'12.7062"N	104°12'6.2943"W	0.00	0.00	0.00	
14126.30†	88.250	89.012	7271.91	7343.15	150.40	7341.61	581942.74	595448.39	32°38'12.7221"N	104°12'5.1256"W	0.00	0.00	0.00	
14226.30†	88.250	89.012	7274.96	7443.10	152.13	7441.55	582042.67	595450.11	32°38'12.7379"N	104°12'3.9569"W	0.00	0.00	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
14326.30†	88.250	89.012	7278.01	7543.06	153.85	7541.49	582142.60	595451.84	32°38'12.7537"N	104°12'2.7882"W	0.00	0.00	0.00	
14426.30†	88.250	89.012	7281.07	7643.01	155.57	7641.43	582242.53	595453.56	32°38'12.7695"N	104°12'1.6195"W	0.00	0.00	0.00	
14526.30†	88.250	89.012	7284.12	7742.96	157.30	7741.37	582342.46	595455.28	32°38'12.7853"N	104°12'0.4508"W	0.00	0.00	0.00	
14626.30†	88.250	89.012	7287.18	7842.92	159.02	7841.31	582442.39	595457.01	32°38'12.8011"N	104°11'59.2821"W	0.00	0.00	0.00	
14726.30†	88.250	89.012	7290.23	7942.87	160.74	7941.24	582542.32	595458.73	32°38'12.8169"N	104°11'58.1135"W	0.00	0.00	0.00	
14826.30†	88.250	89.012	7293.28	8042.82	162.47	8041.18	582642.25	595460.45	32°38'12.8328"N	104°11'56.9448"W	0.00	0.00	0.00	
14926.30†	88.250	89.012	7296.34	8142.77	164.19	8141.12	582742.18	595462.18	32°38'12.8486"N	104°11'55.7761"W	0.00	0.00	0.00	
15026.30†	88.250	89.012	7299.39	8242.73	165.91	8241.06	582842.10	595463.90	32°38'12.8644"N	104°11'54.6074"W	0.00	0.00	0.00	
15126.30†	88.250	89.012	7302.44	8342.68	167.64	8341.00	582942.03	595465.62	32°38'12.8802"N	104°11'53.4387"W	0.00	0.00	0.00	
15226.30†	88.250	89.012	7305.50	8442.63	169.36	8440.94	583041.96	595467.35	32°38'12.8959"N	104°11'52.2700"W	0.00	0.00	0.00	
15326.30†	88.250	89.012	7308.55	8542.59	171.08	8540.88	583141.89	595469.07	32°38'12.9117"N	104°11'51.1013"W	0.00	0.00	0.00	
15426.30†	88.250	89.012	7311.61	8642.54	172.81	8640.81	583241.82	595470.79	32°38'12.9275"N	104°11'49.9326"W	0.00	0.00	0.00	
15526.30†	88.250	89.012	7314.66	8742.49	174.53	8740.75	583341.75	595472.51	32°38'12.9433"N	104°11'48.7640"W	0.00	0.00	0.00	
15626.30†	88.250	89.012	7317.71	8842.45	176.25	8840.69	583441.68	595474.24	32°38'12.9591"N	104°11'47.5953"W	0.00	0.00	0.00	
15726.30†	88.250	89.012	7320.77	8942.40	177.98	8940.63	583541.61	595475.96	32°38'12.9749"N	104°11'46.4266"W	0.00	0.00	0.00	
15826.30†	88.250	89.012	7323.82	9042.35	179.70	9040.57	583641.54	595477.68	32°38'12.9906"N	104°11'45.2579"W	0.00	0.00	0.00	
15926.30†	88.250	89.012	7326.87	9142.31	181.42	9140.51	583741.47	595479.41	32°38'13.0064"N	104°11'44.0892"W	0.00	0.00	0.00	
16026.30†	88.250	89.012	7329.93	9242.26	183.15	9240.44	583841.40	595481.13	32°38'13.0222"N	104°11'42.9205"W	0.00	0.00	0.00	
16126.30†	88.250	89.012	7332.98	9342.21	184.87	9340.38	583941.33	595482.85	32°38'13.0379"N	104°11'41.7518"W	0.00	0.00	0.00	
16226.30†	88.250	89.012	7336.03	9442.17	186.59	9440.32	584041.26	595484.58	32°38'13.0537"N	104°11'40.5831"W	0.00	0.00	0.00	
16326.30†	88.250	89.012	7339.09	9542.12	188.32	9540.26	584141.19	595486.30	32°38'13.0695"N	104°11'39.4144"W	0.00	0.00	0.00	
16426.30†	88.250	89.012	7342.14	9642.07	190.04	9640.20	584241.12	595488.02	32°38'13.0852"N	104°11'38.2458"W	0.00	0.00	0.00	
16526.30†	88.250	89.012	7345.20	9742.02	191.76	9740.14	584341.04	595489.75	32°38'13.1010"N	104°11'37.0771"W	0.00	0.00	0.00	
16626.30†	88.250	89.012	7348.25	9841.98	193.49	9840.08	584440.97	595491.47	32°38'13.1167"N	104°11'35.9084"W	0.00	0.00	0.00	
16726.30†	88.250	89.012	7351.30	9941.93	195.21	9940.01	584540.90	595493.19	32°38'13.1325"N	104°11'34.7397"W	0.00	0.00	0.00	
16826.30†	88.250	89.012	7354.36	10041.88	196.93	10039.95	584640.83	595494.92	32°38'13.1482"N	104°11'33.5710"W	0.00	0.00	0.00	
16926.30†	88.250	89.012	7357.41	10141.84	198.66	10139.89	584740.76	595496.64	32°38'13.1640"N	104°11'32.4023"W	0.00	0.00	0.00	
17026.30†	88.250	89.012	7360.46	10241.79	200.38	10239.83	584840.69	595498.36	32°38'13.1797"N	104°11'31.2336"W	0.00	0.00	0.00	
17126.30†	88.250	89.012	7363.52	10341.74	202.11	10339.77	584940.62	595500.09	32°38'13.1954"N	104°11'30.0649"W	0.00	0.00	0.00	
17226.30†	88.250	89.012	7366.57	10441.70	203.83	10439.71	585040.55	595501.81	32°38'13.2112"N	104°11'28.8962"W	0.00	0.00	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

WELLPATH DATA (185 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
17326.30†	88.250	89.012	7369.63	10541.65	205.55	10539.65	585140.48	595503.53	32°38'13.2269"N	104°11'27.7276"W	0.00	0.00	0.00	
17426.30†	88.250	89.012	7372.68	10641.60	207.28	10639.58	585240.41	595505.26	32°38'13.2426"N	104°11'26.5589"W	0.00	0.00	0.00	
17526.30†	88.250	89.012	7375.73	10741.56	209.00	10739.52	585340.34	595506.98	32°38'13.2583"N	104°11'25.3902"W	0.00	0.00	0.00	
17626.30†	88.250	89.012	7378.79	10841.51	210.72	10839.46	585440.27	595508.70	32°38'13.2741"N	104°11'24.2215"W	0.00	0.00	0.00	
17660.96	88.250	89.012	7379.85‡	10876.15	211.32	10874.10	585474.90	595509.30	32°38'13.2795"N	104°11'23.8165"W	0.00	0.00	0.00	LTP (660'FNL & 100'FEL)

HOLE & CASING SECTIONS - Ref Wellbore: Palmillo 29-30 State Com 271H PWB Ref Wellpath: Palmillo 29-30 State Com 271H Rev-A.0

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing	26.30	6470.00	6443.70	26.30	6466.66	0.00	0.00	25.22	82.43

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Palmillo 29-30 State Com 271H - FTP	7325.75	7064.24	33.20	545.25	575147.00	595331.20	32°38'11.6389"N	104°13'24.6024"W	point
2) Palmillo 29-30 State Com 271H - LTP	17660.96	7379.84	211.32	10874.10	585474.90	595509.30	32°38'13.2795"N	104°11'23.8165"W	point

SURVEY PROGRAM - Ref Wellbore: Palmillo 29-30 State Com 271H PWB Ref Wellpath: Palmillo 29-30 State Com 271H Rev-A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.30	17660.96	Custom OWSG MWD+IFR1+SAG+FDIR (Approximation)		Palmillo 29-30 State Com 271H PWB



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REFERENCE WELLPATH IDENTIFICATION

Operator	Apache Corporation	Well	Palmillo 29-30 State Com 271H
Field	Eddy County, NM (NAD-83)	API/Legal	
Facility	Palmillo 29-30 State Com Pad	Wellbore	Palmillo 29-30 State Com 271H PWB
Slot	Palmillo 29-30 State Com 271H		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
26.30	0.000	72.988	26.30	Tie On
1000.00	0.000	72.988	1000.00	Start Build
1333.33	5.000	72.988	1332.91	End Build
1988.90	5.000	72.988	1985.98	Start Drop
2322.23	0.000	89.012	2318.89	End Drop
6590.34	0.000	89.012	6587.00	Start Build
7325.75	88.250	89.012	7064.24	End Build - Landing
17660.96	88.250	89.012	7379.85	LTP (660'FNL & 100'FEL)

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Electronically
Via E-permitting

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: APACHE CORPORATION **OGRID:** 873 **Date:** 11 / 02 / 2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name (North Pad)	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Camacho 25-26 State Com301H		Sec 25 T19S R27E	820' FNL 445' FEL	477	914	1103
Camacho 25-26 State Com 201H		Sec 25 T19S R27E	790' FNL 445' FEL	594	1426	1190
Palmillo 29-30 State Com 375H		Sec 25 T19S R27E	730' FNL 445' FEL	788	1917	2150
Palmillo 29-30 State Com 271H		Sec 25 T19S R27E	700' FNL 445' FEL	864	1573	1645

Camacho wells - CAMACHO 25-26 CTB

IV. Central Delivery Point Name: Palmillo wells - PALMILLO 29-30 CTB [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Palmillo 29-30 State Com 301H		11/30/2024	1/4/2025	Not yet scheduled	Not yet scheduled	Not yet scheduled
Palmillo 29-30 State Com 201H		3/26/2025	4/23/2025	Not yet scheduled	Not yet scheduled	Not yet scheduled
Palmillo 29-30 State Com 375H		1/25/2023	2/28/2023	Not yet scheduled	Not yet scheduled	Not yet scheduled
Palmillo 29-30 State Com 271H		1/31/2023	3/15/2023	Not yet scheduled	Not yet scheduled	Not yet scheduled

VI. Separation Equipment: ☐ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ~~XX~~ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ~~XX~~ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

~~XX~~ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

XXOperator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Sorina L Flores</i>
Printed Name:	Sorina L Flores
Title:	Sr Regulatory Analyst
E-mail Address:	sorina.flores@apachecorp.com
Date:	11/2/2022
Phone:	432-818-1167
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

VI. SEPARATION EQUIPMENT

(Complete description of how Apache will size separation equipment to optimize gas capture)

Apache Corporation production tank batteries will include separation equipment designed to efficiently separate gas from liquid phases to optimize gas capture based on projected and estimated volumes from the targeted pool in conjunction with the total number of wells planned to/or existing within the facility. If determined to be undersized or needed, separation equipment will be upgraded prior to well(s) being drilled or completed. The separation equipment will be designed and built according to relevant industry specifications, ie API specifications 12J and ASME Sec VIII Div 1. Other recognized industry publications such as Gas Processors Suppliers Association will be referenced when designing separation equipment to optimize gas capture.

VII. OPERATIONAL PRACTICES

(Complete description of actions Apache will take to comply with the requirements of Subsection A-F of 19.15.27.8 NMAC)

(A) Venting & flaring of natural gas

- Apache acknowledges venting or flaring of natural gas during drilling, completion, or production operations constitutes as defined in 19.15.2 NMAC is prohibited. Apache will maximize recovery of natural gas by minimizing waste of natural gas through venting and flaring. During drilling, completion and production operations, Apache will vent, or flare natural gas only as authorized in subsections B, C and D of 19.15.27.8 NMAC. Apache shall flare rather than vent natural gas except when flaring technically infeasible or would pose a risk to safe operations or personnel safety, and venting is a safer alternative than flaring.

(B) Venting & flaring during drilling operations

- Apache shall capture or combust natural gas, if technically feasible, using best industry practices and control technologies
- A properly sized flare stack will be located at a minimum of 100 feet from the nearest surface hole location unless otherwise approved by the division.
- In the event of an emergency or malfunction, Apache may vent natural gas to avoid risk of an immediate and substantial adverse impact on safety, public health, or the environment. Apache shall report natural gas vented or flared during an emergency or malfunction to the NMOCD division pursuant Paragraph (1) of Subsection G of 19.15.27.8 NMAC.

(C) Venting & flaring during completions and recompletion

- During initial flowback, Apache shall route flowback fluids into a completion or storage tank and, if technically feasible under the applicable well conditions, flare rather than vent and commence operations of a separator as soon as it is technically feasible for a separator to function.
- During separation flowback, Apache shall capture and route natural gas from separation equipment:
 - ◆ To a gas flowline or collection system, reinject into the well, or use on-site as a fuel source or other purpose that a purchased fuel or raw material would serve; or
 - ◆ To flare if routing natural gas to a gas flowline or collecting system, reinjecting it into the well, or using it on-site as fuel source or other purpose that a purchased fuel or raw material would serve would pose a risk to safe operation or personnel safety.
- If natural gas does not meet gathering pipeline quality specifications, Apache may flare natural gas for 60 days or until the natural gas meets pipeline quality specifications, whichever is sooner, provided:
 - ◆ A properly sized flare stack is equipped with an automatic igniter or continuous pilot
 - ◆ Apache analyzes natural gas samples twice per week
 - ◆ Apache routes natural gas into a gathering pipeline as soon as pipeline specifications are met
 - ◆ Apache provides pipeline specifications and natural gas analyses to NMOCD division upon request

(D) Venting & flaring during production operations

- Apache shall not vent or flare natural gas except:
 - ◆ During an emergency or malfunction
 - ◆ To unload or clean up liquid holdup in a well to atmospheric pressure, provided:
 - Apache does not vent after well achieves stabilized rate and pressure
 - For liquids unloading by manual purging, Apache remains present on-site until the end of unloading or posts at the well site, contact information of personnel conducting liquids unloading operations in close proximity (<30 minutes' drive time) of well being unloaded until end of unloading, takes all

- reasonable actions to achieve stabilized rate and pressure at earliest practical time and takes reasonable actions to minimize venting to maximum extent practicable
- Apache will optimize system to minimize venting of natural gas for any well equipped with a plunger lift system or automated control system
- During downhole maintenance, best management practices will be used to the extent that it does not pose a risk to safe operations and personnel safety.
- ◆ During first 12 months of production from an exploratory well, or as extended by the division for good cause shown, provided:
 - Apache proposes and the division approves well as exploratory
 - Apache is in compliance with its' statewide gas capture requirements
 - Apache submits an updated C-129 form to the division, including a NGMP and timeline for connecting well to a natural gas gathering system or otherwise approved by the division
- ◆ During the following activities unless prohibited
 - Gauging or sampling a storage tank or other low pressure production vessel
 - Loading out liquids from a storage tank or other low pressure production vessel to a transport vehicle
 - Repair and maintenance, including blowing down and depressurizing production equipment to perform repair and maintenance
 - Normal operation of gas activated pneumatic controller or pump
 - Normal operation of storage tank or other low pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained on an established schedule
 - Normal operations of dehydration units and amine treatment units
 - Normal operations of compressors, compressor engines, and turbines
 - Normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance
 - Bradenhead, packer leakage test or production test lasting less than 24 hours unless the division requires or approves a longer test period
 - When natural gas does not meet gathering pipeline specifications
 - Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities from pipeline or equipment

(E) Performance standards

- All tanks and separation equipment are designed for maximum throughput and pressure to minimize waste
- Permanent storage tanks associated with production operations that is routed to a flare or control device installed after May 25, 2021, shall equip storage tank with an automatic gauging system that reduces venting of natural gas
- Apache will install a flare properly sized and designed to ensure proper combustion efficiency
 - ◆ Flare stack installed or replaced after May 25, 2021, shall be equipped with an automatic ignitor or continuous pilot
 - ◆ Flare stack installed before May 25, 2021, shall be retrofitted with an automatic ignitor, continuous pilot or technology that alerts operator that flare may have malfunctioned no later than 18 months after May 25, 2021
 - ◆ Flare stack located at well or facility, with an average daily production of equal to or less than 60 mcf of natural gas shall be equipped with an automatic ignitor or continuous pilot if flare stack is replaced after May 25, 2021
- Flare stack constructed after May 25, 2021, shall be securely anchored, and located at least 100 feet from well and storage tanks unless otherwise approved by the division
- At any point in the life of the well (drilling, completion, production, inactive) an audio, visual and olfactory (AVO) inspection will be performed weekly, during first year of production and on well or facility with average daily production greater than 60,000 cubic feet of natural gas, to confirm all production components are operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC.
- Apache will make and keep records of AVO inspections available to NMOCD for at least 5 years
- Apache may use a remote or automated monitoring technology to detect leaks and release in lieu of AVO inspections with prior NMOCD approval
- Facilities will be designed to minimize waste
- Apache will minimize waste and shall resolve emergencies as quickly and safely as feasible

(F) Measurement or estimation of vented and flared natural gas

- Apache shall measure or estimate volume of natural gas it vents, flares, or beneficially uses during drilling, completion, and production operations regardless of the reason or authorization for such venting or flaring
- Measurement equipment will be installed to measure volume of natural gas flared from existing process piping or flowline piped from equipment associated with a well or facility associated with approved application for permit to drill that has an average daily production greater than 60 mcf of natural gas
- Measuring equipment shall conform to an industry standard
- Measuring equipment shall not be designed or equipped with a manifold that allows diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment
- Apache may estimate volume of vented or flared natural gas using methodology that can be independently verified if metering is not practicable due to low flow rate or pressure
- Apache will estimate volume of vented and flared natural gas based on result of an annual GOR test for that well reported on form C-116 to allow division to independently verify volume and rate of flared natural gas for a well that does not require measuring equipment
- Apache shall install measuring equipment whenever the division determines metering is practicable or the existing measuring equipment or GOR test is not sufficient to measure volume of vented and flared natural gas

VIII. BEST MANAGEMENT PRACTICES

(Complete description of Apache's best management practices to minimize venting during active and planned maintenance)

- Apache has a flare stack designed to handle sufficient volume to ensure proper combustion efficiency. Flare stacks are securely anchored at least 100 feet from wells and storage tanks and are equipped with continuous pilots.
- Apache will not produce oil or gas but will maintain adequate well control through completion operations
- Apache will not flow well during initial production until all flowlines, tank batteries, and oil/gas takeaway are installed, tested, and determined operational
- Apache will equip storage tanks with automatic gauging system to reduce venting of natural gas
- When feasible, Apache will combust natural gas that would otherwise be vented or flared
- When feasible, Apache will minimize venting through pump downs of vessels and reducing time required to purge equipment before returning to service
- When feasible, Apache will shut in wells in the event of a takeaway disruption, emergency situations, or other operations where venting or flaring may occur due to equipment failures
- Reduce number of blowdowns by looking for opportunities to coordinate repair and maintenance activities

HYDROGEN SULFIDE (H₂S) DRILLING OPERATIONS PLAN

Hydrogen Sulfide Training:

All regularly assigned personnel, contracted or employed by Apache Corporation will receive training from qualified instructor(s) in the following areas prior to commencing drilling possible hydrogen sulfide bearing formations in this well:

- The hazards and characteristics of hydrogen sulfide (H₂S)
- The proper use and maintenance of personal protective equipment and life support systems.
- The proper use of H₂S detectors, alarms, warning systems, briefing area, evacuation procedures & prevailing winds.
- The proper techniques for first aid and rescue procedures.

Supervisory personnel will be trained in the following areas:

- The effects of H₂S on metal components. If high tensile tubulars are to be utilized, personnel will be trained in their special maintenance requirements.
- Corrective action & shut-in procedures when drilling or reworking a well & blowout prevention / well control procedures.
- The contents and requirements of the H₂S Drilling Operations Plan

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500') and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received proper training.

H₂S SAFETY EQUIPMENT AND SYSTEMS:

Well Control Equipment that will be available & installed if H₂S is encountered:

- Flare Line with electronic igniter or continuous pilot.
- Choke manifold with a minimum of one remote choke.
- Blind rams & pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head & flare gun with flares

Protective Equipment for Essential Personnel:

- Mark II Survive-air 30 minute units located in dog house & at briefing areas, as indicated on wellsite diagram.

H₂S Detection and Monitoring Equipment:

- Two portable H₂S monitors positioned on location for best coverage & response. These units have warning lights & audible sirens when H₂S levels of 20 ppm are reached.
- One portable H₂S monitor positioned near flare line.

H₂S Visual Warning Systems:

- Wind direction indicators are shown on wellsite diagram.
- Caution / Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

Mud Program:

- The Mud Program has been designed to minimize the volume of H₂S circulated to the surface. Proper mud weights, safe drilling practices & the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.
- A mud-gas separator and H₂S gas buster will be utilized as needed.

Metallurgy:

- All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold & lines, & valves will be suitable for H₂S service.
- All elastomers used for packing & seals shall be H₂S trim.

Communication:

- Cellular telephone and 2-way radio communications in company vehicles, rig floor and mud logging trailer.

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operators and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the :
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Apache Corporation personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Apache's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

WELL CONTROL EMERGENCY RESPONSE PLAN

I. GENERAL PHILOSOPHY

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle an emergency is with an experienced organization set up for the sole purpose of solving the problem. The *Well Control Emergency Response Team* was organized to handle dangerous & expensive well control problems. The *Team* is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, *The Emergency Response Team* will be mobilized. The *Team* is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

- A. In the event of an emergency the *Drilling Foreman* or *Tool-Pusher* will immediately contact only one of the following starting with the first name listed:

Name	Office	Mobile	Home
Danny Laman – Drlg Superintendent	432-818-1022	432-634-0288	
John Vacek – Drilling Engineer	432-818-1882	281-222-1812	
Bobby Smith – Drilling Manager	432-818-1020	432-556-7701	
Bill Jones – EH&S Coordinator		432-967-9576	

***This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel & equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for us by the Permian Region. The room has 50 separate telephone lines.*

- B. The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the *Team*. If **DANNY LAMAN** is out of contact, **JOHN VACEK** will be notified.
- C. If a member of the *Emergency Response Team* is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.
- D. Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

EMERGENCY RESPONSE NUMBERS:

SHERIFF DEPARTMENT	
Eddy County	575-887-7551
Lea County	575-396-3611
FIRE DEPARTMENT	
	911
Artesia	575-746-5050
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
HOSPITALS	
	911
Artesia Medical Emergency	575-746-5050
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359
AGENT NOTIFICATIONS	
Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161

Apache Corp respectfully requests approval for the following changes and additions to the drilling plan:

1. Utilize a spudder rig to pre-set surface casing.
2. Description of Operations
 1. Spudder rig will move in their rig to drill the surface hole section and pre-set surface casing on the Palmillo 29-30 State COM 271H.
 - a. After drilling the surface hole section, the rig will run casing and cement following all the applicable rules and regulations (19.15.16 NMAC Drilling and Production).
 - b. Rig will utilize fresh water based mud to drill 17-1/2" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
 2. The wellhead will be installed and tested once the 13-3/8" surface casing is cut off and the WOC time has been reached.
 3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
 - a. A means for intervention will be maintained while the drilling rig is not over the well.
 4. Spudder rig operations is expected to take 1-2 days on a single well pad.
 5. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
 6. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.
 7. Apache Corp will have supervision over the rig to ensure compliance with all NMOCD regulations and to oversee operations.
 8. Once the rig is removed, Apache Corp will secure the wellhead area by placing a guard rail around the cellar area.

